NEW YORK STATE MECHANIC.

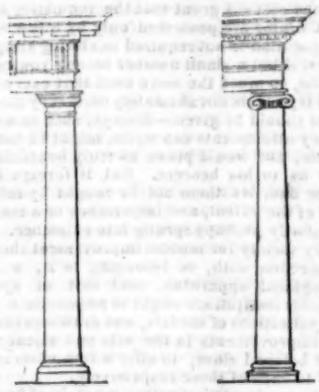
A Journal of Science, Literature, the Mechanic Arts, Manufactures, News, &c.

VOL. II. ALBANY, MARCH 11, 1843. No. 16.

CIRCLE OF THE MECHANIC ARTS.

No. XIII.

ARCHITECTURE.—NO. IX.



Roman Doric, represented with a base, after the restorations of the moderns. Grecian Ionic.

Ionic order—The origin of this order is accounted for by Vitruvius, in the following manner:—"Ion, building a temple to Diana, and seeking some new manner to render it more elegant, had recourse as before in the Doric order, to the human figure; and gave to this new order a feminine delicacy; thus he was the first who gave eight diameters to a column that the aspect might be more pleasing; and, that its appearance might be more lofty, he added a base, in imitation of a shoe; the volutes, like locks or plaits of hair, hanging on each side, he gave to the capital, ornamented with fruits, or flowers, in festoons or furrows, or flutings down the column were wrought, resembling the folds or plaits of a matron's garment. Thus he invented two kinds of columns, in the Doric imitating a manly robust appearance, without ornament; in the Ionic, regarding a female delicacy, accompanied with ornaments pleasing and elegant. Succeeding architects, much approving the taste and ingenuity of this design, allowed eight diameters and a half to this order." Virtruvius records an anecdote much in praise of the Ionic order, in the following words: "the difficulty attending the proper adjusment of the mutules, metopes, and triglyphs, in Doric structures, was such, as frequently to be a cause of much inconvenience and trouble to architects, in large buildings, and also rendered their aspect confused and embarrassing; on which account, and the massy appearance of the Doric column, it was thought improper for sacred buildings: of this opinion were Tarchenus Pytheus, with many ancient architects; also the celebrated Hermogenes, who, when he was building the temple of Bacchus sat Teos, rejected the Doric, though all the marble were ready cut, and in its stead erected a temple of the Ionic order. The modern Ionic has the volute of the capital executed on an angular plan, the same as in the composite order; so that, viewed every way, it has the same appearance; this differs from the general mode of the antiques, which was to have volutes parallel. And to Michael Angelo this was attributed as a new invention; but examples are found in the capitals of the angle columns in the temple of Erictheus at Athens, and in the temple of Fortuna Virilis at Rome. Piranasi has endeavored to prove the first idea of the Ionic volute to have been derived from shells; and certainly many pleasing forms of convolution may be obtained from the section of shells.

The standard of the modern proportions is as follows; The height of the column is eighteen modules, and that of the entablature four modules and a half, or one quarter the height of the column, as in the other orders, which is a trifle less than in the regular antique Ionics: the capital is twenty-one minutes, and the base thirty minutes in height; the shaft of the column may be plain, or fluted, with twenty or twenty-four flutings, whose plan may be a trifle more than a semicircle, because they then appear more distinct; and the fillet or interval between them must not be broader than one-third of the breadth of the fluting, nor narrower than one quarter thereof; the ornaments of the capital are to correspond with the flutings of the shaft; and there must be an ove above the middle of the arch fluting. The entablature being devided into ten equal parts, three are for the architrave, three for the frieze, and four for the cornice. In interior decorations, where much delicacy is required, the height of the entablature may be reduced to one-fifth of the height of the column.

Corinthian order—This differs from the Ionic only in its capital; the Ionic capital having no more than one-third of the diameter of the column for its height; but the Corinthian capital is allowed one entire diameter, which gives to the column a noble but delicate grandeur. The other members placed on the Corinthian pillar, are common to the Doric and Ionic orders; for it has no particular species of ornament peculiar to its cornice; sometimes it has the Doric mutules and triglyphs in the architrave; sometimes an Ionic frieze, with dentiles in the cornice; in a manner, it is no more than a third order, risen out of the former two, which has nothing peculiar to itself but the capital. Its origin Virtruvius records as follows: "A marriageable young lady of Corinth fell ill, and died; after the interment, her nurse collected together sundry ornaments with which she used to be pleased, and, putting them into a basket, placed it near her tomb; and, lest they should be injured by the weather, she covered the basket with a tile. It happened the basket was placed on a root of acanthus, which in spring shot forth its leaves; these, running up the side of the basket, naturally formed a kind of volute, in the turn given by the tile to the leaves. Happily Callimachus, a most ingenious sculptor, passing that way, was struck with the beauty, elegance, and novelty of the basket surrounded by the acanthus leaves; and, according to the idea or example, he afterwards made columns for the Corinthians, ordaining the proportions such as constitute the Corinthian order." Vitruvius, in the foregoing account, forgot the peculiarities of the Corinthian cornice, or the entablature to that order was not then practised in the manner we find remaining among ancient buildings; for to this cornice the modilion is ever an attendant. But exactly according to this description of Vitruvius, is the cornice of the portico at Athens, called Poikilie, as represented by the indefagitable Stuart, in his valuable antiquities of that ancient city.

The beauty and elegance of this order have rendered it famous, and the many examples existing among the fragments of antiquity, sufficiently evince the great esteem with which it was regarded. The ravages of cruel and desolating war, however, have not left us one remain of this order, from among the many celebrated examples which the city of Corinth possessed, where arts of every kind, and particularly architecture, eminently flourished and were carried to perfection. In later times the conduct of Lucius Mummius, in the destruction of that polished people and city, would have justly been considered as the grossest barbarism; the temples, the sacred buildings, were destroyed, and levelled with the ground; so that at one stroke the works of ages were desolated, the labors and ingenuity of thousands were destroyed, and posterity deprived of every trace of this order, in the place of its nativity and nurture.

The moderns have adopted the following proportions; the column is twenty modules in height; the entablature five modules; the base one module, and may be either Attic or Corinthian; the capital has seventy minutes in height; the proportion of the members of the entablature is the same as in the Tuscan and Ionic orders. If the entablature is enriched, the shaft of the column may be fluted, and the flutings may be filled to one-third part of their height with cabling, which will strengthen the lower part of the column, and make it less liable to injury. In very rich interior decorations, the cabling may be composed of reeds, ribands, husks, flowers, &c. The capital is enriched with olive-leaves, as almost all the antiquities at Rome of this order are; the acanthus is seldom employed but in the Composite order: the entablature may be reduced to two-ninths or one-fifth of the height of the column; in which case it is best to use the Ionic entablature, or reduce the dentiles of the cornice. A profile of this order will accompany the next article.

MR. ANTHONY'S ADDRESS,

Before the Albany Mechanic's Association.

[Concluded.]

When we speak of education as applied to mechanics, or *any other class*, we do not wish to be understood as saying that every individual of that class must become a deep thinking—strong headed man;—This is impossible. Nor do we wish to imply *that every one* is in duty bound to dive into the depths of mathematics, or learn all languages, ancient and modern. We do say, however, that every man is bound to improve the talents he possesses; and that upon *mechanics*, as the backbone of our country, the obligation to do this rests with peculiar force. If any one is placed in favorable circumstances for doing so, there is no doubt that it is his *duty*, as well as interest to strive for a place with Franklin, Sherman, and others who have left us a noble example for our im-

itation. Nay he should ever aspire to be a *Newton*, a *Ferguson*, or a *La Place*.

The number of those who enjoy such opportunities is small; but that circumstance does not lessen the responsibility of such as do enjoy them. Neither should they who are not so highly favored suppose that these remarks are not intended for *them*. No mechanic need be deprived of the blessings which flow from the acquisition of knowledge.

But some will say—"Our avocations are not congenial to the developement of our intellectual resources. This is a mistake. Bodily exercise is so far from being prejudicial to mental discipline that it may be converted into a most powerful auxiliary. So much so indeed, that the *Author* who desires to cultivate a *nervous* style of composition, will find it beneficial to labor a few hours every day. The daily toil of the working man, then, serves a double purpose,—it ministers to his wants, and at the same time invigorates his intellect.

Mechanics cannot avoid feeling that they occupy a place among the most useful members of society; and it will not be considered unreasonable for them to wish that their relative importance should be recognised by every other portion of community. This cannot be until they, themselves challenge public sentiment in their favour, by exhibiting a noble independence in vindicating their claims to an exalted rank among their fellow men. The example of men who have, by their own industry, been raised from poverty to affluence, has done much to render the name of mechanics respectable; but that of one Franklin, or one Burrit does more than they all.

We would urge upon you the importance of acquiring knowledge because it will promote your health and increase your bodily comforts. To you it is not merely a matter of *convenience* that you are free from disease. Your vigor of frame is absolutely necessary to you. Every day that you are sick subtracts so much from the means of support for yourselves and families. You are more frequently exposed than men of any other occupation, to the operation of causes, which tend to make your "days short, and full of misery." It is therefore your duty to put on a "sure defence" against the evils to which you are liable.

Do you ask? "Will science protect us?" We answer, yes. See for yourselves what it has already accomplished. Think of the safety lamp; of the varied combinations of chlorine, with their disinfecting powers; the precautions which are given in regard to the use of chemical agents, and the many dissertations on these and other kindred subjects which a little preparatory knowledge will enable you to read, and comprehend.

Now look forward, and tell me if it is not probable that a period will shortly arrive when mechanics shall enjoy every pleasure of sense that they may desire, (saving those luxuries, whose tendency is to debase both body and mind,) and be free from many miseries to which they are now subject.

The most common excuse that we hear urged for neglecting self-education is, "want of time." Many things might be said to show the fallacy of such an argument; but we will allow John Neal to touch the subject in his usual happy style.

"But say those who appear to have judgment in these matters—we have no time for study,—we the mechanics—no time for study! What! have you no time when a huge, pondorous body is to be lifted—no time to fix the lever and fulcrum; to prepare the inclined plane and hitch the tackle? Is it economy of time for you to do that with your hands which might be done with the simplest machinery? Would you task your apprentices to work, your journeymen and yourselves to lift and carry by main strength what a child might push forward on a roller, if you would but take the time to fix the roller? What would you say of a man who, instead of using a plough where others do, should persist in digging a large field with a fire shovel, because he had never been brought up to the plough? What if a man who, instead of splitting his logs for fire wood with a beetle and wedge, were to saw them in two lengthwise with a key-hole saw,—declaring all the while that as for him, he did not pretend to know much about mechanics; that a key-hole saw was good enough for him,—and as for the beetle, and wedge, and other out-of-the-way contrivances, for his part he had no belief in them.

Would you not laugh at him as a poor economist of *time*, and a very poor reasoner? and would he not be likely to remain a very poor man? Yet he would say no more than you say,—every man of you—when you declare you have no time for reading—no time for study,—no time to improve yourselves, each in his particular trade, by stepping out of the circle he was brought up in,

How do you know but there is some shorter, and easier way of doing *all that you do* in your workshops and factories? Be assured that there is a shorter and easier way for all of us;—that there is no one thing, we do, in which improvements may not be made. Have you not the proofs continually before your eyes? Are not the *master-workmen* the owners and *employers* of other men?—are they not those who have made the best use, not of their *fingers*, but of ther *thinkers*?"

You *have* time for study. Every one, whose example it will be your pride to follow, found time,—and *you* may find time. Curtail or abandon your unprofitable amusements. Spend your evenings in reading and thought. Sieze a book at every interval in your labor. By these means you will *save* so much time that it will appear to you as if each day were longer than before.

And your days *are* longer now than formerly,—for all practical purposes. The hours of labor are abridged. The introduction of labor-saving machinery has placed before you inconceivable facilities for accomplishing your work. What will you do with the leisure thus afforded you? Shall it not be spent in promoting the object of your existence? I speak as to *reasonable* men—judge ye!

Let us pass now to the consideration of the *means* to be employed by mechanics in bettering their mental and moral condition.—Among these I consider the formation of societies for mutual improvement, as the most prominent.

There are many considerations that present themselves, while contemplating the results of these institutions, pointing to the amount of good they have already done, and how much they promise yet to do. There must necessarily be among mechanics many sound *heads*, as well as efficient *hands*.

Labor may be a *severe*, but it is a *salutary* school for the *mind*, as well as the *body*. Men taught in this school, may not possess elevated imaginations, but they often exhibit strong currrents of deep thought, chastened and improved by sound judgment, and good sense. These they communicate one to another by such a mode of exchange that each party becomes a gainer. Thus many rays of genius, that would otherwise be dispersed and lost, are concentrated and combined into one grand focus. Thus two men of good understanding may perfect plans for the advancement of themselves, their children, and apprentices in knowledge and respectability. In this way too, *science* and *art*, two good friends that should never be separated, may go hand in hand, accomplishing their great work,—the amelioration of our mental, moral, and physical condition. But time would fail us should we attempt to enumerate the many advantages that flow from this source. Suffice it to say, that where these institutions prosper, the industrial classes have more comfortable dwellings, and are blessed with more of the solid means of enjoyment, than in places where they are neglected.—Themselves are more respected; their children better educated, and their apprentices more intelligent and faithful.

In regard to the *details* to be observed in the formation of such societies, I shall say but little, inasmuch as *circumstances* will vary so much in different cases that there will be very few items in which any two associations agree. Some general rules however, may be given, the essentials of which will be equally applicable to all.

Let them always begin on a small scale, and let the determination be that they shall be built on their own capital.—To this end, seek not aid from the patronage of the wealthy and the influencial, but rather let them depend upon their internal resources.

Admit no members for their *names* or *influence* merely; but examine well the character of the candidate. If immoral or slothful, or penurious, or wanting in public spirit, be assured, they will always hang as a dead weight upon you. Envious persons will be found more troublesome, than many at first would imagine, because they will oppose any measure, however judicious, if they snppose its tendency to be the advancement of the *other members* beyond the limits they have prescribed for themselves.

Allow no precedence to rank, or wealth or popularity, but ever let good sense and honest endeavors to promote the general welfare meet with that respect which they merit. Avoid, I intreat you the rocks upon which too many like institutions have split.—Be not ungrateful. A mere handful of resolute men always comprises all the *original projectors* of such societies. There are not wanting those who are ever ready to turn the suggestions of others to any purpose that may effect their own aggrandisement. After the plan of any such undertaking is matured, these will generally assume the honor of putting the finishing stroke, that by this means they may secure to themselves the credit of the whole enterprise. They obtain the most important offices, while the originators are forgotten, or treated with cold neglect. As you value your prosperity do not suffer such men to trample under their feet your more deserving associates.

Do not send abroad for lecturers with a view of raising the character of the association. All the factitious reputation you succeed in gaining in this way, will assuredly be lost, prematurely, perhaps, "without a fault."

Our Websters and Everett's and Verplanks are sufficiently harrassed by the importunities of *other* societies which aspire to tack themselves upon the skirts of great men's garments.

In this age of light you will not find a community of men that does not contain in its bosom who can instruct the rest—I grant that the requisites to form a perfect orator are possessed only by a few.—But refined elocution is not required in stating simple facts. Besides, if but a small number among you *can* speak in public, so much the more need that every member should try. It is not absolutely necessary that *formal lectures* should be given.—Essays, such as any one of ordinary attuinments can write, might be substituted for them, and would prove as truly beneficial to the author as to his hearers. But if foreign lecturers must be had, let them not be caught by inflated accounts of the extent, and importance of a society that but yesterdy perhaps sprung into existance.

Every society for mutual improvement should have in connection with, or belonging to it, a Library, Philosophical apparatus, and suit of specimens. Mechanics institutions ought to possess in addition to these, collections of models, and drawings illustrative of the improvements in the arts and sciences. Permit me before I close, to offer a few observations in regard to each of these respectively.

A Library is emphatically a fountain of knowledge: and as such, it should be cherished. Unlike other fountains, *its* waters become purer from frequent dippings. If you have access to a library, you will feel bound, of course, to contribute to its support. But do not suppose that your duty *ends* here. You are under as much obligation to *use* it, as you are to assist in sustaining it. If you are a father, you should remember that the eyes of your children are upon you. If *you* read, *they* will read; if you do not, they will still follow your example. Are you a Master-mechanic, the same observation will hold true in regard to your journeymen and apprentices. Do you occupy both those stations? Then your obbligations are two-fold.

I need not ask you whether you prefer that those who stand in such interesting relations to you should be intelligent or ignorant; but would inquire if you consider fully the influence that your example may have in forming their habits and cultivating their taste. But whatever may be your age, or condition, whatever the nature of your employment, you know the intrinsic value of knowledge. Use your library then as the source whence it is to be drawn. Preserve it, not only from *contamination by the introduction of improper* books, but also from the appearance of *decay*. Let it be cared for in all its interests, so that you and all your dependents may always regard it with heart felt satisfaction, and speak of it to others with emotions of honest pride.

Apparatus and specimens will be needed, and you may easily obtain them. Almost every member might contribute something. All the apparatus that is used in this or in any other country is made by mechanics; and can they not make it as well for their own use, as for that of schools, academies and colleges? In regard to specimens. The foundation for a cabinet may be laid in the voluntary contributions of the members. Donations of friends and strangers will then enlarge it until it assumes a place among the prominent features of the institution.

Not less important than these, will be a collection of models and drawings. It is said that the Conservatory of arts and trades at Paris is the admiration of all who visit it. *There* may be seen in miniature the most useful instruments and machines from all parts of the kingdom, and many even from foreign countries. This museum is open to all. Twice a week, a man attends for the purpose of making explanations. Can practical men desire a better study?

Scarcely inferior to this is the National Repository of London. Here are gathered together specimens illustrative of the most important inventions and improvements of modern times. It was under the patronage of the King and Nobility—and it is to be hoped that the young Queen will smile upon it occasionally.

Among its managers are some of the most distinguished men in the kingdom.

Such collections stould be *commenced* in every town and city in the United States,—and suitable edifices prepared for their reception. There they would *remain* for ages, pointing out to successive generations the genius and enterprise of the nineteenth century.

As we are convinced that a Library, suit of specimens, apparatus, models &c. constitute the *glory* and *boast* of such a society as we have been contemplating; it may not be unprofitable to enumerate some of the causes that will operate to impair its usefulness. The most prominent among these, are,

Want of public spirit on the part of the members.

That kind of parsimony that extinguishes every spark of public spirit.

An unjust aversion to modern improvements.

An apathy in regard to eveyy thing but *self*.

A desire among the *few* to rule; and a willingness on the part of the *many* to be ruled.

Non attendence at the mettings, and a failure to form a quorum.

"The tardiness of one small wheel may throw an immense machine out of gear."

Prolonged debates on questions of order, &c.

And the introduction of political and sectarian influence.

Whenever the sun of intelligence shall shine with sufficient force to dispel those and other clouds which occasionally darkens the prospects of your institutions, we may expect the new era to dawn with peculiar brilliancy. As one of the first fruits of this renovated order of things, society will behold, with astonishment, those heretofore regarded as men of *muscle* rather than mind, sending forth from their ranks, Statesmen, Philosophers, and Legislators whose practical good sense will put to the blush the fine drawn hypotheses of mere theoretical reasoners.

Gentlemen of the Asssociation:

Let me entreat you, not only to *think* of these things to which you have listened so attentively, but to make them the basis of future action. If you cast about you, you will find your resources to be greater and more available than one would at first sight suppose. No mortal can forsee what results the future history of this institution may disclose, as the reward of your present efforts; how many bright luminaries of genius may shine forth from among its members; how many philosophers may rise up from among your children, and your apprentices; what cabinet of models will be formed; what tasteful edifices will be erected to contain those collections, and what important discoveries you, and others who tread in the same path will yet be permitted to make. Judging of the future by the past" you may as well count upon the fulfilment of such high expectations as the faithful husbandman, who "sows in hope" may be sure that he shall "reap in joy."

"But" say you "there are insuperable difficulties that present themselves. there is such a want of unanimity, no public spirit; all that is accomplished must be done by a few; in short we are in the condition described by Pope."

> Truths would you teach, or save a sinking land,
> All fear, none did you, and few understand."

Grant it to be so, and let me ask, was the American revolution projected by the mass of the people, or by the few whose wisdom ruled the country? The declaration of independence was drawn up by *one* man, and yet *all* our representatives pledged for its support "their lives; their fortunes, and their sacred honor!" Our forefathers rallied round it, and shed their blood to maintain it.

The revolution that *we* contemplate is a *moral* one; and *one* declaration must set forth the independce of mind.

There may be among you a Henry, an Adams, a Hancock, and perhaps many Franklins, and Shermans. Perchance there is not wanting a Jefferson.

If you find such a one let him draw up a bill of rights and duties. Let this be sustained, and be assured, success will attend you. You are called upon now, to do that for your own good, and for your children's *mental* and *moral* welfare, that your sires have done for *you* in regard to your political interests.

If the voice of our orators should be heard in the councils of the nation recounting the aggressions of some foreign government, and proclaiming in accents of thunder—"We must fight,—I repeat it sir, we must fight," how speedily every one among you would sieze his arms!

And you *must fight*; we repeat it, you *must fight*! Ignorance is no contemtible adversary. She desolates society; she checks improvements; she lays waste your fields; she pampers idleness; she engenders disease; she produces riot; makes paupers for the almshouse, tenants for the prisons, and malefactors for the scaffold. Indeed her taxes are heavier than those on tea, and her acts are worse than the stamp act.

No contest with such an enemy can be inglorious; unless with the balance of power on your side, and your arms in your hands, you surrender at discretion. If you *conquer* you will not only secure the gratitude of your sons, and their offspring to the latest generations, but the remnant of your days will be enlivened with that joy which ever attends a consciousness of a life devoted to the public good.

This warfare is a bloodless one. Your library, your apparatus, your debates, your lectures and essays, and above all your zealous industry, must be your weapons, many of you are armed and equipped; and *all* may be. Let him who hath no sword, sell his garment and buy one."

We must not, however, flatter ourselves that knowledge will come to us without any effort being made on our part. No great good can be realised unless exertions be made to secure it. "Who would not call him the most infatuated of men, who should be sent to explore a gold region, and who should expect the mines to break open at his feet, and disclose to him, without toil their richest deposits. And how is he less foolish who is sent to explore a world of duty, and who thinks he can perform the work of a good and faithful servant without making a word of inquiry as to where the treasures are which he is to dig up, or without analysing a single fragment of the rocks around him to see whether they contain precious ore? "The demonstration of the forty-seventh problem did not force itself upon Pythagorus. He had paved the way for its reception by study and deep thought.—He opened his eyes, and light entered in. It was not by *accident* merely that Archimedes was brought to comprehend the doctrine of specific gravity. It was intimately connected with the accomplishment of an object towards which he extended every energy of his mind. Think you that the fall of an apple would have suggested to Newton the idea of gravitation if his mind had been occupied at the time in contemplating the sublimity of a horse-race?

Or would Arkwright have invented the spinning jenny if, instead of devoting years of reflection to the subject, and performing hundreds of experiments, he had contented himself with contemplating the profundity of his own *natural* powers, and the golden favors that blind fortune might have in reserve for him?

These master-spirits of genius and talent *labored* because they considered that *means* were always requisite to the attainment of ends. They took science for their guide knowing her light to be constant and safe. As *they* did, so must *we* do. The same obligations that bound them, devolve upon us; the same rewards that crowned their exertions, await *all* those who tread in the paths their footsteps have marked.

THE INGENUITY OF SPIDERS.

The mechanical resources of the lower animals have often excited admiration, and though no comprehensive and systematic series of observations have yet been made upon them, the time is, I believe, not distant when the task will be undertaken—perhaps within the next century. But whenever and by whomsoever accomplished, the mechanism of animals will then form the subject of one of the most interesting and *useful* volumes in the archives of man.

Among the insects, spiders have repeatedly been observed to modify and change their contrivances for ensnaring their prey. Those that live in fields and gardens often fabricate their webs or nets vertically. This somtimes occurs in locations where there is no object sufficiently near to which the lower edge or extremity of the web can properly be braced; and unless this be done, light puffs or breezes of wind are apt to blow it into an entangled mass. Instead of being spread out, like the sail of a ship, to the wind, it would become clewed over the upper line, or edge, like a sail when furled up. Now how would a human engineer act under similar circumstances? But ere the reader begins to reflect, he should bear in mind that it would not do to brace the web by running rigging from it to some *fixed* or immovable object below—by no means;—for were this done, it could not yield to impulses of wind; the rigging would be snapped by the first blast, and the whole structure probably destroyed.

Whatever contrivances human sagacity might suggest, they could hardly excel those which these despised engineers sometimes adopt. Having formed a web, under circumstances similar to those to which we have referred, a spider has been known to descend from it to the ground by means of thread spun for the purpose, and after selecting a minute pebble, or a piece of stone, has coiled the end of the thread round it. Having done this, the ingenious artist ascended, and fixing himself on the lower part of the web, hoisted up the pebble until it swung several inches clear of the ground. The cord to which the weight was suspended was then secured by additional ones, running from it to different parts of the web, which thus acquired the requisite tension, and was allowed, at the same time, to yield to sudden puffs of wind without danger of being rent asunder.

A similar instance came under my notice a few days ago. A large spider had constructed his web, in nearly a vertical position, about six feet from the ground, in a corner of my yard. The upper edge was formed by a strong thread, secured at one end to a vine leaf, and the other to a clothes line. One part of the lower edge was attached to a Persian sun-flower, and another to a trellis fence, four or five feet distant. Between these there was no object nearer than the ground, to which an additional brace line could be carried; but two threads, a foot asunder, descended from this part of the web, and, eight or ten inches below it; were united at a point. From this point, a single line, four or five inches long, was suspended, and it its lower extremity was the weight, a *living one*, viz: a worm three inches long, and one-eighth of an inch thick. The cord was fastened around the middle of the victim's body, and as no object was within reach, all its writhings and efforts to escape were fruitless. Its weight answered the same purpose as a piece of inanimate matter, while its sufferings seemed not in the least to disturb the unconcerned murderer, who lay waiting for his prey above.

Whether the owner of the web found it a more easy task to capture this unlucky worm and raise it, then to elevate a stone of the same wieght, may be a question. Perhaps in seeking for the latter, the former fell in his way, and was seized, as the first suitable object that came to hand—like the human tyrant, (Domitian) who, to show his skill in archery, planted his arrows in the heads of men or cattle, in the absence of other targets. It may be, however, that a piece of stone, earth or wood, of a suitable weight, was not in the vicinity of the web.

To observe the effect of this weight, I separated, with a pair of scissors, the thread by which it was suspended, and instantly the web shrunk to half its previous dimensions—the lower part became loose, and with the slightest current kept shaking like a sail shivering in the wind A fresh weight was not supplied by the next morning: but instead of it, two long brace lines extended from the lower part of the web to two vine tendrils, a considerable distance off. These I cut away, to see what device would be next adopted, but on going to examine it the following day, I found the clothes line removed, and with it all relics of the insect's labours had disappeared.

INTELLECTUAL STATE OF RUSSIA.—The number of journals which at present issue from the Russian press is seventy-three; and of these the *Northern Bee* and the *Patriot* enjoy the most extensive circulation. They are written in no less than twelve different languages. The number of elementary schools is 1,411. They are frequented by 70,000 pupils. So that, on a comparison of the total number of children capable of instruction in the Russian dominions with those who are actually educated, there does not appear to be more than one in 367 whose mind is even superficially cultivated. There are some universities in Russia, at which 3,100 youths are now being educated, under the care of 300 professors. The ecclesiastical nursery is well attended to; inasmuch as the four academies of theology at Kiew, St. Petersburgh, Moscow, and Kasan, together with the thirty-seven upper and eighteen lower seminaries appertaining to the Greek church, contain 36,000 pupils, in charge of 427 professors.—*Times.*

ORGANIZATION OF INDUSTRY.

Under this head we purpose, with your permission, to lay before your readers, in separate articles, a development of the objects and ends we have in view, as propounded by the clear-sighted and benevolent Charles Fourier.

Satisfied that in doing so we lend our humble aid in calling the attention of your more intelligent readers to a subject that is rapidly spreading over the length and breadth of the land—a principle, when put in practice, which will supercede all superficial reforms, and give a permanency to every thing that is worthy of being associated with a well-directed and an enlightened society.

We go under the broad principle of uniting in our Association *all good men*, laying no claim to sect or party, but offering the right hand of fellowship to the *rich and the poor*, that by our united efforts we may secure to ourselves the right of labor in agreeable occupation, just dividends, the advantages of economies only to be realized in an association, and to establish a complete system of education in all useful and elevating branches of physical, intellectual and moral science, together with the most ample provision for the aged and afflicted. To prosecute such branches of mechanical, scientific, agricultural and horticultetal employment, as shall be conducive to our good; to divide the product of our labor among ourselves, on a discriminating scale, by which all shall as nearly as possible reap what he may sow. To preserve individuality; to cherish and strengthen all the tender ties and relations growing out of the family compact. To enlarge the freedom of the individual, by granting to all varied occupation, and the selection of the particular branch of industry for which they may feel an attraction.

For this end, we intend to locate upon and cultivate from two to three thousand acres of land, and to erect buildings for the accommodation of our members, upon the most approved scientific plans. We believe we shall thus be enabled to pass our days, released from anxious cares for the future, and under a sense of security, and in the hope of high attainment, to avoid the perpetual conflict which renders society at present little better than Pandemonium.

We therefore call upon all to give this subject a candid consideration, confident that the majority will fall in with our views. It is open for the mechanic, the farmer, and the capitalist, and it now rests with them to combine the elements of wealth and health under an association. Beginning with agriculture, which forms too important an item in the catalogue of human wants to be dispensed with, for a single day—the soil then is the fulcrum on which to fix the lever of industry—by so doing we shall raise ourselves to the highest, accomplishing more than Archimedes imagined. How important is it then that our attention should no longer be diverted into other channels, but that we should at once commence to open up this never-failing source of happiness, enabling man really to enjoy his own vine and his own fig tree. Already has the benign influence of the principles taken root, and the results are most favorable for the cause. Happy it were for society, if the operations of Association were more generally felt and appreciated. But as yet it is in its infancy, compared with the vastness of the human family. As all things have a beginning, *it is better to begin right than end wrong*. With patience and perseverance we will pursue our course. And like the slow but sure operations of nature, if they put us not in the possession of the extreme point of our desire, will assuredly bring us nearer its attainment, and bless us with success. Then would the pure stream of charity diffuse its genial and pellucid waters over the vast field of human society. Then, indeed, would the world be truly a terrestrial Paradise, and we might exclaim in the words of the immortal poet, "*Oh, happy, with reality of Heaven.*"

We give below an account of the German Society of Industry in M'Kean county, Pennsylvania, which we believe will be found interesting to your readers. We may also inform you, that our Society meets every Monday night at 7 o'clock, at the Republican Hotel, where we invite all who feel inclined, to come and *judge for themselves*.

GERMAN ELECTION.—At a general meeting of the "German Society of Industry," held at their school house in Teutonia, on Monday, the 6th of February, 1843, the following officers were elected for the term of one year: Henry Schweitzer, President; Louis Ganss, Vice President; Aug. Vollmer, Book Keeper; John Roth, Secretary; Members of the Board of Direc ors, for six months, Nicholass Sinss, T. N. Seidensticker, and Koehler—for three months, Daniel Klemm and Aug. Wolters; Store Keeper, John F. Ramm, and Emig.

About one year has now elapsed since this society commenced their settlement in M'Kean county, and they have already put up and completed about sixty houses and an extensive tannery, at Teutonia, 12 miles south of Smithport, and 12 more at Ginalsburg, 3 miles farther south, together with one steam saw mill, which is in complete and successful operation. They have already chopped for clearing about 250 acres, considerable of which they have already cleared and put into wheat, which is very promising. They keep from 40 to fifty hands at chopping, when the weather will permit, all of them members of the society. They expect to raise sufficient grain for their consumption next season.

The whole population of the society already on hand amounts to 420, of which 130 are able bodied men. Many more are ready to come on in the spring. They have a good German school of about 45 scholars, between the ages of 6 and 14 years, in very flourishing condition; and they intend to establish an English school in the course of next season, and to add about 100 to the present number of their houses. They have on hand, and are finishing, leather of all kinds, sufficient to keep 8 boot and shoe makers constantly employed; and their leather is said to be of superior quality. They have already made arrangements for enlarging this branch of their manufactures by extensive buildings for the purpose.

Among their mechanics they have an experienced potter, a glass maker, &c. They contemplate establishing a pottery soon, and are consulting on the expediency of erecting a glass works. Considering the pressure of the times and the necessary inconveniences of making a settlement and erecting buildings, and establishing manufactures, in a new country, our German neighbors have not only shown themselves competent judges of soil and location in the selection of their home, but thorough and industrious cultivators and mechanics, by the improvements already made. May they long continue to prosper and flourish, and may they find the home of their adoption all that they anticipated, and their neighbors such as they would wish to associate with, and may their enterprise induce many more to settle on our fertile, cheap and pleasant wild lands.

The loathsome is abominable and no engine of expression. When Spenser dragged into light the entrails of the serpent slain by the Red-cross-Knight, he dreamed a butcher's dream and not a poet's.

KNOWLEDGE FOR THE PEOPLE.

BY JOHN TIMBS.

MECHANICS.

Why is iron admirably adapted for the construction of suspension bridges?

Because the greater part of the weight of these bridges arise from the chains themselves, wherefore, the best material for the purpose, is that which has great tenacity with small weight; and iron is at the same time the most tenacious, and, excepting tin, the lightest of the common metals. A square inch of good iron requires about 25 tons to separate it,—and it will not be stretched or otherwise affected, with less than half that weight. Rope bridges, have however, been introduced with the advantages of economy and portability, into British India, where a rope bridge, 160 feet in length, is so light and portable, that it has been several times set up and removed in a few hours.—*Ainger.*

We may here mention, that Mr. Bevan has found the strength or cohesion of cast-iron, to be 50,000 pounds to the square inch, though much depends upon the mode of applying the force.

Why is iron best cemented by cast-iron?

Because pure iron, when surrounded by and in contact with cast-iron turnings, and heated, is carbonized very rapidly, so as to exhibit all the properties of steel.

Why is heated air now used in smelting iron?

Because it requires but three-fourths of the quantity of coal requisite, when cold air, that is, air not artificially heated, is employed for that purpose; while the produce of the furnace in iron, is at the same time greatly increased. It is supposed, that this improvement will accomplish a saving in the cost of the iron, in Great Britain, to the amount of at least 200,000*l.* a year.—*Jameson.*

Why are piles for bridge-building, driven by great weights being suddenly let fall on them?

Because the body of the workmen being too weak, to give a forcible downward push directly, he employs a certain time in carrying a weight up to such an elevation above his work, that when let fall, its momentum may do what is required. Here the continued efforts of the man in lifting the weight, to a height of perhaps thirty feet, may be just sufficient to sink into the earth one inch; and the continuance has, therefore, balanced forces, which are to each other in intensity, as thirty feet to an inch.—*Arnott.*

Why does an ill-built bridge generally flatten in the arch?

Because the builder has not sufficiently attended to the effects of the horizontal thrust of the arch on its piers. Each arch is an engine of oblique force, pushing the pier away from it. In some instances, one arch of a bridge falling, has allowed the adjoining piers to be pushed down towards it, by the thrust, no longer balanced, of the arches beyond; and the whole structure has given way at once, like a child's bridge, built of cards.—*Arnott.*

The principle of bridge-building is beautifully illustrated by the toy-models; the stones being represented by separate pieces of wood, which the juvenile architect is required to form into an arch, or arches. It could be wished that the above and such scientific toys were better appreciated in England. They seem only to suit the caprice of the moment. Thus, the Chinese, Indian, and other puzzles, were but the favourites of a year, and Dr. Brewster's splendid kaleidoscope was less understood, and more abused, than any modern discovery.

DAMP DESTROYER.—By placing an unstopped bottle or more open vessle, if convenient, containing strong sulphuric acid, in any part of a room, the moisture the air becomes rapidly absorbed, and thes alubrity of the apartment consequently impoved. The great capacity of sulphuric acid for vapour and the cheapness of the acid, renders this mode of absorbing humidity very economical.

ALBANY, SATURDAY, MARCH 11, 1843.

THE PRISONS AND MINES.

Some of the western members of our Legislature seem to look with rather an unfavourable eye upon the plan proposed for the employment of the convicts in our iron mines, for the reason that the manufacture of silk in the Auburn prison, now going into successful operation, would thereby be abandoned. This is a mistaken view. None are more willing than the mechanics, that the culture of silk should be carried on as far as practicable in that prison. But it must be borne in mind, that as it is the *labor* of the convicts, and nothing more, of which the state wishes to dispose, so as not to interfere with the labor of the mechanics, and that whatever employment the state sees fit to adopt for the prisoners, regard must be had to the selection of one in which the *labor* of the convicts can be most profitably invested. Now it must be evident that in the manufacture of silk but a small portion of the labor of the prisoners could be rendered available. Farther than that; it is, as the saying is, "light work," and only fitted for women and children; the weakly, the aged and decrepit; and the condemnation of "hard labor" in our prisons would be a mere nullity, should this business be the principal one carried on. Nor does the plan of employing the convicts in the mines involve the necessity, or even propose the abolition of the Auburn prison; on the contrary, it would rather favor its continuance, for the purposes above specified, of giving employment to those who might be incapacitated for laboring in the mines, and for the manufacture of such articles of clothing, &c., as might be needed by those thus employed.

This is a matter that looks to permanency and to profit to the state, without involving the *possibility* of interference with any department of industry carried on in the state. The objection that an interference with those of our citizens engaged in mining will result by the adoption of this plan is most futile, and would not be argued by any one who understands the matter of which he speaks. More than $10,000,000 worth of iron is imported into our country yearly from Britain alone, not to mention an immense quantity of iron manufactures. In fact, even with this immense importation we have not been able fully to supply ourselves with that kind of iron, the manufacture of which is now contemplated. Such iron is infinitely superior to most imported, and equal in all respects to any; and while, as before remarked, the plan would look to permanency and profit, the *labor* of the convicts, the only thing of which the state has to dispose, would be advantageously employed on such manufactures as owe their great price to the *amount* of labor necessary to their production. The objection of interference, when the fact of our dependence for iron *on* foreign countries is so notorious, strikes us as being the last one to which to resort, and so idle as to show that it would not be adduced only for want of a better to support an unstable theory.

OUR CITY ARTISTS.

We have for some time entertained the design of appropriating a column of our paper to a brief notice of the artists, the sculptors, painters and engravers of our city; and have only been prevented by a lack of space. We do not mean of course, to refer to those flitting birds of passage, which with a mighty straining of throats in self praise, and hired puffing, occasionally bestow upon us "dear, dull phlegmatic Albanians," a week or two of their condescending presence. The artists who make our city their home, and feel proud to call themselves Albanians, alone claim our attention.

Since the departure of Mr. W. K. Brown sculptor, for Italy, we have left among us but Messrs. J. & T. A. Carew, nephews of the eminent British artist of the same name, of that profession. Still, we can point to as beautiful works of art from their chisels, as many of our sister cities, claiming names of more note perhaps, and making greater pretensions; indeed we may safely challenge a comparison. Mr. Carew has just finished two or three busts of some of our citizens, which, for accuracy and elegance of finish we have never seen surpassed. Nor is his talent confined to this department of his art, as an examination of his other works will testify. We have to regret that we cannot go into a specification, or give his works the elaborate notice which they deserve. Let our citizens call at his rooms in Stanwix Hall and examine for themselves; and we would recommend to our friends who may be in the city to do the same, for half an hour could not be more agreeably spent. Before passing, however, we would remark, that we trust a partial support on the part of our citizens will not induce Mr. C. to leave us to seek a more liberal people, or more congenial atmosphere.

Of our painters, portrait and miniature, we have before spoken, and we can only reiterate what we have already said. We are glad to see that Mr. Goodwin is resuming his pencil and devoting more time to his profession. Mr. Wagner and his accomplished sister, are begining to be appreciated, for people have at last made the discovery that they can get better pictures at home than abro d, even though the artist do not prefix his name with "Mes suier," or add on his card, from "Paris". We must object however, to our Trojan neighbors monopolising Miss W. exclusively; although by doing so, we are constrained to add, they are raising themselves mightily in our estimation, both as judges and appreciaters of excellence.

To our "corps" of engravers, we have now added Mr. J. W. Orr, late of Buffalo, whose engravings illustrating the "Guide book to the falls of Niagara" have commanded so universal and deserved admiration. He with his brother Mr. N. Orr, whose advertisement may be found in our paper, are young artists of great promise and eminently deserving of support. We are confident that *our* prediction of their ultimate and complete success will be realized, in case the predictions of sundry other sage and wise ones relative to the destruction of "all things," engravers among the number, should not be.

We cannot conclude our brief notice without adverting to Mr. Forbes painter and engraver, who has been with us for more than a year past. Mr. F. is too well known as an engraver to need any praise from us; and as a painter, to which art he is of late attaching himself, we would commend him to the public, with perseverance. We feel ourselves able to assert, Mr. F. will yet distinguish himself in the latter art, and be enabled to *quarter* the pencil with the graver on his coat of arms. Confidence, that assurer of success, to say the least, is not wanting.

We have to regret, that in the small space which under the press of matter, we can devote to this article we cannot enter more particularly into our subject, and do that justice to our artists which their attainments and excellence demand.

Since writing the above we have learned that Mr. Carew has accepted an invitation to Boston, to pursue his profession in connection with Brackett, the sculptor. We regret that it is so, and yet we are pleased that so flattering an opening has occurred. We would heartily commend Mr. C. to our Boston neighbors.

IRON STATISTICS.

The following statistics have been gathered from reliable sources, and, in connection with the subject of iron manufacture in our prisons, cannot fail to be of interest. It will be seen that in touching upon the same points, they tend to confirm the conclusions of Mr. Cook, as submitted in his late able report. The account of importation will effectually put to rest the objection of interference with home manufacturers; and the table of prices, which at this time are 20 per cent. higher, will show that if profit to state be regarded, no plan equally good can be devised as that proposed in Mr. C's report.

Value of Iron and Iron Manufactures imported into the United States during the year ending Sept. 30th, 1841:

Bar Iron, manufactured by rolling,..	$2,172,278
Bar Iron, manufactured otherwise,..	1,614,619
Steel,.....	609,201
Pig Iron,.....	223,288
Bed and Scrap,.....	10,537
Band and Scroll Iron,.....	1,161
Sheet & Hoop,.....	376,075
Nail and Spike Rods,.....	613
Brazier's Rods,.....	12,843
Castings, vessels of.....	19,546
Castings, other.....	110,087
Blacksmith's Hammers,.....	2,015
Anvils,.....	35,720
Anchors,.....	18,466
Mill Saws,.....	2,255
Cables and Chains,.....	150,442
Spikes,.....	5,436
Nails,.....	81,951
Tacks and Brads,.....	1,064
Wire,.....	21,512
Wood Screws,.....	138,527
Various Manufactures,.....	3,289,663
Fire Arms,.....	12,277
Total,.....	$8,915,076

Added to these are several articles of manufacture not enumerated, but probably amounting to from $1,000,000 to $2,000,000.

The value of Exports of Iron during the same time is as follows:

Pig, Bar and Nails,.....	138,537
Castings,.....	99,904

All Manufactures of..... 806,823

$1,045,264

Iron Produced in the State of New York:

Cast Iron,..... 29,088 tons.

Bar Iron,..... 53,693 do Total, 82,781

Iron Produced in the Union.

Cast Iron,..... 286,903 tons.

Bar Iron,..... 197,233 do Total, 484,781

At what prices were sales made, in large quantities, in January and July, respectively, in each of the years 1840 and 1841, and in January, 1842? Lowest prices:

	Jan. 1840.	July, Jan 1840.	Jan 1841.	July, Jan. 1841.	Jan. 1842.
Bars Common English,					
rolled, per ton,	$75	65	70	62½	55
" refined, do do do	90	87½	85	80	75
" Am. refined, per ton,	90	87	85	80	78
" Swedes, hammered, do	90	80	85	80	80
" Old Sable, do do do	about $15 per ton more than Swedes Iron.				
" Bloomed Am. rolled do	80	70	65	60	60
Blooms American, per ton,	65	60	58	55	55

Old Sable means the best Russia iron, manufactured with charcoal and hammered.

Col. Joseph Jackson, a man well known as extensively engaged in the mining business, since 1803, says to the committee of manufactures of the house of Rep. that "He manufactures bloomed iron in bars, hammered and rolled, of all sizes. The principal reason why iron cannot be made as cheap in this country as in Europe, is the difference in the price of labor. The English iron comes principally in competition with ours, it being an inferior article, manufactured in large quantities, and sold cheap; our iron is much better, and costs more to make it. Bank's refined English iron is about equal to ours, and comes in competition with it. Russia and Swedes iron is the best iron, equal to our best hammered, and comes in little competition with it, being principally used in making springs, tools, &c. The Swedish and Russian iron is all hammered, the English is rolled or puddled and rolled."

REPORT OF THE COMMISSIONER OF PATENTS.

By this valuable document we learn that the number of patents issued during the year 1841, was 495; and that 327 patents expired during the same time. The number of applications for patents during the year 1842 was 847; the number of caveats filed was 312. The whole number of patents issued by the United States previous to Jan., 1842, was 12,487. The report of the commissioner exhibits indefatigable zeal and industry in the discharge of his duties, and a lively interest particularly in the promotion of agricultural improvements. We have room only for very brief extracts from his remarks on agricultural statistics.

Wheat.—In the production of this great staple, Ohio stands foremost, her crop in 1841 being nearly *eighteen millions* of bushels, while New York and Pennsylvania were each a little over twelve millions.

Barley.—New York produces about half the barley raised in this country.

Oats.—New York takes the lead in the amount raised; and is closely followed by Pennsylvania. Large quantities are annually produced in all the states, principally for the feeding of horses; though in Europe they are used to a considerable extent as one of the bread stuffs.

Rye.—Is principally confined to a few states. It has heretofore been extensively used for distillation, and the quantity raised will probably decrease with the decline of the distilleries. Pennsylvania raises one-third of the whole crop; it is cultivated largely in New York, New Jersey, Virginia and Kentucky.

Buckwheat.—New York, New Jersey and Pennsylvania produce five-sevenths of the whole crop. In those states it is used extensively as an article of food.

Maize, or Indian Corn.—This crop is more extensive than any other; the number of bushels raised in 1841 being 387,380,185, while that of wheat was 91,642,957. The largest amount was raised in Tennessee, Kentucky, Ohio, Indiana and Virginia.

Potatoes.—Of the one hundred and twenty million bushels of potatoes raised in 1841, thirty millions were raised in New York, eleven millions in Maine, and nine millions in Pennsylvania. The crop of that year was unusually small. In proportion to her population, Vermont may be considered foremost in the cultivation of potatoes.

Hay.—The product was remarkably successful during the past year. Of nearly thirteen million tons, the whole product, New York produced more than one quarter.

Tobacco.—The crop of 1841 was 12,000 hogsheads, and the crop for 1842 was expected to reach 20,000. Virginia, Kentucky, Tennessee, North Carolina and Maryland, are the tobacco growing states. The value of the article exported in 1839 was $10,449,155, and the amonnt exported in 1840 was 144,000,000 pounds. The greater part of this goes to England, Holland, France and Germany.

Rice.—Is principally cultivated in South Carolina and Georgia, and forms an article of export. The rice used in Great Britain is principally derived from India.

PRISON BILL.

Mr. Pentz, chairman of the prison committee in assembly, has presented a report, accompanied with a bill, to the house, based upon Mr. Cook's report, and providing for the employment of the prisoners in mining and the manufacture of iron. It is too long for insertion this week, but we shall endeavor to present it to our readers in our next. We trust this bill will prevail; and we hope, also, that the mechanics will now *act* in the matter, and co-operate with our friends in this city in pressing this matter through this winter.

WHITE BLUE STEM WHEAT.—We have received at different times, through the politeness of Mr. Ellsworth, commissioner of patents, several samples of wheat, which are believed to be somewhat rare here, and are valuable for withstanding the ravages of the fly and various diseases, better than our common wheat. The origin and properties of the white blue stem wheat is thus given by Hon. John Snyder, of Union county, Pa. "My neighbor, Christian Kloss, saw, in his field of blue stem wheat, a single topproud head; he was struck with the contrast between it and wheat of the whole field, this being the only white head in it, and much the largest. At harvest time he secured the head and seeded it in is garden the coming fall; (I do not recollect the time, perhaps six years since;) he divided the next year's produce among his neighbors, and last fall there was perhaps 1000 bushels of this seed sown; one farmer had 400 bushels: It is called Kloss's White Blue Stem. The wheat I send is the growth of last year; it will be recollected our country was filled with rust and smut,—this wheat escaped, yet, it is not quite as full in the grain as the crop of the preceeding year. It weighs 65 lbs. per bushel. We have the Mediterranean wheat in our county—the White Blue Stem is considered far superior. Hoping it may prove useful to the agriculturist, it being Pennsylvania staple, I hazard nothing in recommending it as the best wheat in the northern part of the state, and quite the best I ever saw."

Besides the above we have samples of the Mediterranean and Valparaiso wheat, from the same source.

SALLY ANN BUSINESS.—As we have before stated, the difficulty found in the use of anthracite coal, in making iron, is that the furnace man has only been able to produce an inferior article with it. But if the following account is to be relied on, the use of anthracite and the cold blast are likely to do the right kind of business yet. We shall look for something further on this subject. The *Miner's Journal* says:

"Mr. Maurice McKinney, founder of the Sally Ann Furnace, Rockland township, Berks county, in November last, when the owner, Mr. J. V. R. Hunter, was about blowing out for the purpose of repairing, requested permission to try the furnace with anthracite coal and a cold blast. The owner, being doubtful of success, consented, but furnished him with only two weeks' stock. On Nov. 4 he commenced blowing, and by the 11th of Nov. had cast thirty tons, which was about their average yield—the second week, ending the 18th, he cast thirty-five tons, and on the 21st the furnace ceased blowing. Our informant states that the iron thus made is of the first quality, being equal in every respect to that made with charcoal. We also learn that a furnace, for the manufacture of iron solely with anthracite and the cold blast, is already in progress of preparation. If this is found to succeed, the process must be generally adopted, as it is now proven to be the cheapest as well as the best mode of manufacture.

WEST'S PAINTING still remains at the Museum, but we are told it will be removed to Utica after this week. If there are any who have not availed themselves of the opportunity of witnessing this splendid picture, by an American artist, we advise them not to lose the chance, which is now short.

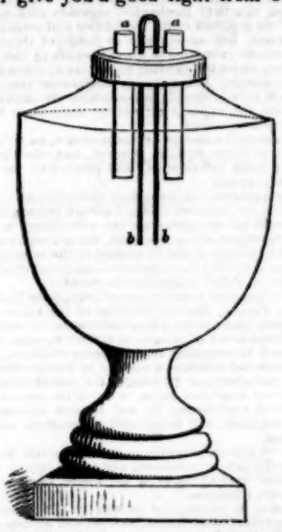
QUERY.—Why does solid cast iron float upon the same kind of iron in a state of fusion? Is it because iron expands in cooling?

[From the Cultivator.]

LARD LAMP.

MESSRS. GAYLORD & TUCKER.—We are learning something from the pressure of necessity. I have within the last month, ascertained from actual experience, that there is no need of separating lard into oleine and stearine for lights. The lard itself, simply melted and poured into lamps either of metal or glass, answers perfectly, if there be two tubes for the wicks, of copper, two inches long; and between these, a copper wire of the size of a small goose quill, bent in the form of a staple,

be inserted through two holes, so that the ends will nearly reach the bottom of the oil, and the bent part of the staple remain half an inch above the top of the tubes for the wicks. When lard is five cents a pound, one cent's worth, with such a lamp will give you a good light from 6 to 11 o'-



clock, or for five hours. *a, a*, tubes for the wicks, *b, b*, the lower ends of the staples. The only precaution in their use, is when you extinguish your lamp at night, to raise the wick an inch, so that the cold lard in the bottom of the lamp, may not pull them too low when the top is unscrewed to replenish them. I have bored holes for staples, and fixed all my lamps in this way. The best candles do not give a better light.

Very truly, your ob't serv't, JOHN LEWIS.

Frankfort, Ky., Dec. 1842.

SYNOPSIS OF PATENTS.

A method of making Knobs for Doors Locks, &c.; John G. Hotchkiss, John A. Davenport and John W. Quincy, city of New York.

Claim.—"What we claim as our invention, and desire to secure by letters patent, is the manufac turing of knobs of potters' clay, or any kind of clay used in pottery, and shaped and finished by moulding, turning, burning, and glazing; and also of porcelain."

Machine for raising and moving buildings; Lewis Pullman, Portland, Chatauque Co., N. York.

The trucks which are to be employed for removing houses are to consist of an axle having a bolster provided with a pivot, on which the body to be moved rests, the trucks are to be furnished with holes, or mortises, in their peripheries to receive hand spikes by which they are to be turned. The apparatus for raising the building, &c., consists of a frame in which there is a screw that works sliding nut, and from this nut are suspended hooks to catch on to the lower part of the house.

Claim.—"What I claim as my invention, and desire to secure by letters patent, is the combination of the pivot and bolster referred to, with the truck employed, for removing buildings and other weights, consisting of an axle and wheels having mortises on their pheripheries to which levers are adapted for moving them. Also in combination with said truck, the screw having a movable nut, with hooks attached to it, for raising buildings, as described."

INTELLIGENCE.

The manufacturers of New England last year, used over two hundred thousand barrels of flour, in making starch and sizing for their goods—being a larger quantity of flour than was exported to England in the same time. The single state of Massachusetts, during the same time, consumed more western flour than was exported to all foreign countries. Is it not the interest of the West to foster manufactories?

Landlord and Tenant.—In the case of Graham vs. Waller, which was tried recently in the Circuit Court, a principle was stated by Judge Kent which is important to all who are in the habit of hiring houses. The Judge instructed the Jury, that if a tenant assigns his lease, the assignee, so long as he continues to be the owner of the house, is *liable to all the covenants therein contained*, whether to repair, pay taxes or otherwise; whereas, if he had merely become under tenant, and hired the premises of the lessee, he would only be liable for rent.

A Menominee squaw in Washington county we learn recently presented her lord with four papooses at one birth. At the suggestion probably of a white neighbor, they were given names that in English signify Remarkable, Wonderful, Strange and True.

We understand that the Governor has nominated M. Myres, S. A. Goodwin, U. Noble, E. Wheeler and S. Brown, to be Inspectors for the state prison at Auburn.

The saw mill belonging to Mr. G. Waffle, of Gates three miles west of the Rapids, was nearly destroyed by fire on Saturday night last, about 11 o'clock. Loss about $600.—*Roch. Dem.*

Immense flights of wild pigeons, supposed to be visitors from America, recently appeared in the vicinity of the lakes and hills of Cumberland, England.

The paragraph which ascribes to Commodore Hull the honor of being the first man who took an English frigate, is not correct. On the 23d of September, 1779, Paul Jones, in command of the *Bon Homme Richard*, of forty guns, captured the English frigate Serapis, of fifty guns. Com. Jones took his prize into a port in Holland.

The Dunkirk Steam Foundry, machine shop and pump factory took fire between one and two o'clock on Saturday morning last and was entirely consumed with all its perishable contents. Loss, about $5,000

The New Yorkers have it in contemplation to employ Stout, one of our native sculptors, to execute a colossal pedestrian statue of Washington, to be placed in the Park. The statue is to be 15 feet tall, and placed on a pedestal 25 feet high. The drapery to be simple.

On Saturday morning a young man named James Gordon, who had been several days laboring under scarletina and a slight delirium, jumped out of a four story window upon the side walk, a few doors south of St. Mark's Place, Third avenue. He survived until ten P. M.

BUSINESS NOTICES.

☞ All letters and communications intended for this paper should be *post paid to secure attention.*

Terms for vol. 2.—To clubs of 20 or more, having the paper sent in one package, $1 each per annum, in advance.

To clubs of not less than 5, sent as above, $1.25 each, in advance.

Single subscribers $1.50, in advance.

Members of the state and county or town associations, subscribing through the secretary, are entitled to the paper at $1 per annum, in advance.

All papers discontinued at the expiration of the time paid for, unless previously renewed.

BINDING.—Subscribers wanting their volumes bound, can have them done in any style and at reasonable prices, by leaving them at this office.

Several volumes of the Mechanic left to be bound some time since are now ready for delivery. The owners are requested to call for them.

To Printers.—FOR SALE CHEAP, a Fount of second hand Pica, about 200 lbs., in good order. Also a quantity of Leads, of different lengths, as good as new. J. MUNSELL.

PRINTING,

IN

ALL ITS DIFFERENT BRANCHES,

SUCH AS

BOOKS, PAMPHLETS, CARDS, CIRCULARS, BILLS, &C.,

Neatly and Expeditiously Executed at the Lowest Prices,

BY

J. MUNSELL,

At the Office of the MECHANIC, No. 58 State street,

ALBANY.

WOOD ENGRAVING.

N. ORR, ENGRAVER on WOOD.

N. ORR, (late pupil of J. H. Hall,) is now prepared to execute any orders in the above business, which he may be favored with, and respectfully solicits a share of patronage.

Room No. 6, 3d floor, Exchange.

Having made arrangements with Mr. N. Orr, to do my wood engraving, I recommend him to the public as one who understands his business and will doubtless give satisfaction.

JOHN H. HALL.

Albany, Feb. 1st, 1843.

LEATHER, OIL, AND FINDING STORE,

No. 18 *Hudson Street.*

J. HOCHSTRASSER,

Will continue the above business at his old stand, and having made arrangements with manufacturers of Leather and Morocco in the cities of NEW-YORK, PHILADELPHIA, and ALBANY, and having in his employ first rate workmen, he is enabled to supply his customers with all the articles in his line on the most reasonable terms, at *Wholesale* or *Retail*, the following are included in his assortment: Oak and Hemlock Harness, Bridle, Collar, Horse, Trunk, Valise and Skirting Leather; Hog Skins, Philadelphia Russet Bridle, do. Facing Skins, do. Lining Hides, do. Top Hides, Patent Leather, Coach Roans, Neats Foot and Liver Oil, Currier's Tools, Oak Sole Leather, Hemlock do., Wax and Grain Upper Leather, do. Calf Skins, Keen's Philadelphia do., Seal and Kip Skins, Splits and Wool Leather, Cordovan, Red, Green, White and Yellow Linings, Goat and Sheep Binding Skins, White Alum Dressed Linings, Dressed and Undressed Morocco, Colored Goat and Sheep Skins, English Shoe Thread of all numbers, India Rubber and Patent Cloth, Apron Skins, Stock Binding, &c.

N. B. An assortment of SHOE MAKER'S FINDINGS will be kept on hand.

Also, *Roller Skins, Engine Hose, Band, Picker, String*, and *Patent Leather*, on hand and made to order. *Albany*, 1841.

To Cabinet-Makers and Upholsterers.

DANIEL FRY, No. 40 State street, *Importer of Cutlery and Hardware*, keeps constantly on hand a good assortment of HAIR SEATING and CURLED HAIR, together with a complete assortment of *Cabinet Makers' Hardware*, which is offered for sale low for cash or approved credit.

FIRE ENGINES!!

THE subscribers are manufacturing at Waterford, on an extensive scale, Fire Engines of various patterns, to suit purchasers, and they do not hesitate to recommend their Engines as decidedly superior to any now in use.

They manufacture the common Piston Engine, to work with chains or connecting rods, which they have improved in the construction of the brakes and the application of the power, so as to give them a decided advantage over those now in use. They also manufacture Rogers' Patent Balance Fire Engine, which has always been proved to be of *superior* power to all others.

Prices at the Factory, in complete order for use:

Those designed

For 40 men, largest Philadelphia size				or 11 inch chambers,		$850
" 28 "	"	Albany	"	8 1-4	"	700
" 22 "	"	Common	"	7	"	600
" 16 "	"	N. York city	"	6 1-2	"	500
" 12 "	"	Small		5 1-2	"	425

These prices are one hundred dollars below what engines have formerly been sold for, but they are reduced to suit the times.

The above prices can be reduced $50, by dispensing with the tower and goose neck and passing the water through the forward end of the machine. The *utility* of such an engine is fully equal to any other form, but its appearance is not quite so good. They also manufacture Factory Engines and Forcing Pumps of all sizes; Suction and Leading Hose to order, both rivetted and sewed, of the best quality.

They have been in the business 8 years, and might furnish many testimonials of good workmanship, &c., but as purchasers are supposed to prefer judging for themselves, the subscribers will furnish an engine where desired, and if on trial it is not fully equal in *all* respects to the *best* engines now in use, they will take it away without charge. Having an unlimited water power situated at the head of sloop navigation on the Hudson river, and near the junction of the Champlain and Erie canal, with a rail road connecting east with Boston and west with Buffalo, our facilities and arrangements for manufacturing are such that orders can be filled at any season of the year, and with the greatest promptness and despatch at the lowest rates.

L. BUTTON & Co.,

Waterford, Saratoga Co., N.Y.

MISCELLANY.

EPITAPH ON A COUNTRY SHOP KEEPER.

Cottons and *Cambrick's* all adieu,
And *muslins* too farewell,
Plain, striped, and figured, old and new,
Three *quarters*, *yard* or *ell*—
By *yard* and *nail*, I've measured ye,
As customers inclined,
The church *yard* has now *measured* me,
And *nails* my coffin bind—
But my kind and worthy friends,
Who dealt with me below,
I'm gone to *measure* time's long *end*,
You'll *follow* me, I know.

THE OLDEST STONE IN CONNECTICUT.—In the burying ground of the ancient town of Windsor, there is a monument stone, almost two hundred years old, which stands firm, with this inscription legible upon it, viz.

"Here lyeth Ephraim Hvit, sometimes Teacher to ye Chvrch of Windsor, who dyed Sept. 14, 1644.

Who when hee lived we drew our vital breath,
Who when hee died his dying was our death,
Who was the stay of State, the Church's staff,
Alas! the times forbid an Epitaph."

American Quarterly Register.

VICISSITUDES OF FORTUNE.—The inhabitants of Falkirk have a picturesque remembrance of seeing riderless horses, after the battle of Falkirk Moor, scampering through the lanes which give entrance to the town on that side—their saddles turned round under their bellies, and many of them trailing their intestines on the ground. A brewer succeeded in securing a beautiful and unwounded horse, which he afterwards reduced to the humble labor of dragging his professional sledge. One day, some years after the battle, when the once spirited animal had become a patient worn out drudge, the brewer was filling the barrel with which it was loaded at the public well, when a troop of dragoons, which happened to be in the town, was called into order by the sound of the trumpet, close to the spot where it was standing. No sooner did the old hack hear the lively point of war, than totally forgetting its present duties, it scampered off along the street, rushed up to the troop, which was then falling into line, and with irresistible force, clearing room for itself among the bystanders took its place, sledge, barrel, brewer and all, in the midst of the ranks. The commander of the troops, highly amused at the scene, patted it kindly on the head, observing, "Ah, you've been a soldier in your day," and gave orders for its being gently led out of the line. —*Chamber's Rebellion.*

LA BOURDONNAIS.—Few men in the last century were more celebrated or more unhappy that La Bourdonnais, the governor of the Isles of France and Bourbon; by whom indeed those two colonies were almost created, and who as a reward for his services was thrown into the Bastile. He there composed a volume of historical memoirs. Handkerchiefs stiffened with rice-water, soot and dregs of coffee; and a small coin, bent, slit, and fastened to a wooden skewer, served him for paper, pen, and ink. The grandson of this intrepid sailor afterwards republished these Memoirs, which contain much curious matter.

CASE OF PRECOCIOUS GROWTH.—Bar Eckhofeber was born in 1806, of healthy and robust parents, of ordinary stature. Her mother had had six children, all of whom had been very strong. At birth, the subject of the present account was twenty-three inches long, and weighed about two pounds more than an ordinary infant. The fontanels of the cranium were not ossified. The growth of the child was very rapid. From the eighth day the mother's milk was deemed insufficient, and broth was given to it. Fifteen days after birth, four teeth appeared; but, excepting the unusual growth of the child, nothing extraordinary was remarked, until the seventh month. At this time she was weaned, and although her food was not of a very digestible quality, her health continued uninterrupted. She now began to walk. The incisor teeth now protruded through the gums, and the hair, which had hitherto been fair, became brown, and grew so fast as to reach the middle of the back. At nine months old she exibited every sign of puberty. After the ninth month she did not grow with such rapidity, but at six years of age she was three feet nine inches in height, and weighed four pounds (Venetian weight.) In the 12th year she died of fever.—*London Med. Gaz.*

THE CHIMPANSA.—This enormous monkey inhabits the coast of the gulf of Guinea. Its height is sometimes greater than that of a man; it has a small beard and mustachios; and is exceedingly pugnacious. It lives in society; at least numerous individuals of the species congregate together, to plunder the negroes and carry off their wives. It builds itself a hut, makes love to the negresses, and drives away those who approach his dwelling, by pelting them with stones. Several young ones have been tamed, and found to possess great imitative talents.

ROMANCE READING.—Perhaps the perusal of romances may, without injustice, be compared with the use of opiates, baneful when habitually and constantly resorted to, but of most blessed power in those moments when the whole head is sore and the whole heart sick. If those who rail indiscriminately at this species of composition were to consider the quantity of actual pleasure which it produces, and the much greater proportion of real sorrow and distress which it alleviates, their philanthropy ought to moderate their critical pride or religious intolerance.—*Scott.*

TEMPER —The great Duke of Marlborough was as remarkable for his good temper as for his good conduct and bravery. Being one day overtaken with a shower, as he was riding, he called to his servant for his great coat, which the man not immediately bringing, nor giving any answer he repeated his order; upon which the fellow muttered, "I suppose you'll stay till I have unbuckled it?" The duke instead of being angry, said coolly to a gentleman who was with him, "now I would not be of that fellow's temper for all the world."

EARTH EATERS.—In M. Malte Brun's "System of Geography," page 389, is an account of the indigenous tribes of Indians in Spanish Guiana "Some of them," he says "separated from each other by language, are a wandering people, completely strangers to agriculture, who live on *ants, gum, and earth*, and are in short, the very outcasts of the human species. The earth which is eaten by the Ottomacks is fat and unctuous; a genuine potter's clay, of a greyish tint, owing to the presence of a little oxyde of iron; they select it with a great deal of care, and procure it from particular beds, on the banks of the Oronoko and the Meta. They distinguish by taste one species of the earth from another, for it is not every species of clay that proves equally agreeable to their palate. They knead this earth into balls of four or five inches in diameter, and roast them before a slow fire until their surface begins to turn red. When they are desirous of eating one of these balls, they wet it again. This savage and ferocious people live on fish, lizards and fern roots when they are to be procured; but they are so particularly fond of clay, that they every day eat a little after their food, during the very season when they have other aliments at their disposal."

Sensibility is the mother of sympathy. How can he paint beauty who has not throbbed at her charms? How shall he fill the eye with the dew of humanity whose own never shed a tear for others? How can the mouth threaten or command, who licks the hereditary spittle of princes.

The axe, the wheel, saw dust and the blood-stained sheet, are not legitimate substances of terror.

PATENT AGENCY AND MECHANICAL ENGINEERING, *Office on F street, between 7th and 8th streets, opposite the Patent Office, Washington City, D. C.*—The subscriber has resigned his situation in the patent office (where he for some time superintended the restoration of patents destroyed by fire in 1836) to devote himself to the preparation of specifications and drawings, and all matters connected with the obtaining of patents for useful inventions either in this country or Europe. His experience in theoretical and practical mechanics, together with an intimate knowledge of the progress of the useful arts and manufactures, at home and abroad, will enable him to judge of the novelty and utility of inventions submitted to his examination and as patents are not granted, under the existing patent laws, when the alleged inventions are wanting in novelty, or contravene the established laws of science, he will be able to furnish all the information necessary to avoid the expense of making application for patents which could not be granted

Having established a foreign correspondence, he will be able to secure patents in Great Britain, France, and other parts of the continent, or furnish information, and prepare all the necessary papers for that purpose.

A model for a machine or apparatus, or specimens for a composition of matter, are required by law, before a patent can issue; by sending a model or specimens to the subscriber, with a short statement of the object of the invention, the necessary papers and drawings will be prepared and forwarded to the applicant for execution, thereby obviating the expenses consequent upon a journey to Washington, or delay in issuing the patent.

Being well acquainted with the patent laws of the United States, England and France, and the decisions of the courts in patent cases, he tenders his services where information is required in reference to infringements of patents, or defence against suits for infringement, such as compiling and arranging evidence, &c.

To individuals and companies wishing to procure drawings and estimates of machinery, or buildings, for manufactories, on the most modern and improved plans, or any other matter connected with mechanical engineering, he will furnish information; and, should it be required, will locate and superintend structures of this description.

Wishing to be generally useful to mechanics and inventors, he will attend to the sale of machinery and patent rights; this, being a place of resort from all parts of the Union, is perhaps the best location for such a purpose.

Papers relating to patents can be sent to the commissioner of patents, when voluminous, free of postage, and models sent to the collectors of the principal ports, will also come free of expense, and the subscriber can be advised thereof by letter, which in all cases must be post paid. All applications for information relating to patents must be accompanied by a fee of five dollars; charges for other business transactions will be made according to their magnitude. J. JAMES GREENOUGH.

Certificate of HON. H. L. ELLSWORTH, *Commissioner of Patents.*
PATENT OFFICE, NOV. 20TH, 1842.

Mr. *J. J. Greenough*, who has for some years been employed in the patent office, in a highly responsible situation, under the act of 1836, restoring the records, having to my regret tendered his resignation, I take great pleasure in recommending him as a gentleman worthy of confidence, and as being particularly qualified to take charge of any business requiring a knowledge of mechanical science, the progress of the arts, and patent improvements. Mr. Greenough is also well acquainted with the practice of this office. HENRY L. ELLSWORTH.

REFERENCES.—Hon. S Prentiss, of *Vt.*, U. S. Senate; Hon. J. P. Kennedy, of *Md.*, U. S. House of Rep.; Hon. John C. Clark, of *N. Y.*, U. S. House of Rep.; Hon W. Cranch, *Chief Justice, D. C.*; J. W. Hand, Esq., *Chief Clerk, Patent Office*; C. M. Keeler, Esq., *Examiner, Patent Office.*

Encourage American manufacture—under this we prosper.

WEAVER & RICHARDSON, Umbrellas and Parasols made, covered and repaired, in the neatest and most durable style, at No. 66 Green street, Albany, opposite the first Baptist church. N. B. Umbrellas can be furnished by the dozen at short notice. 47

PRINTING.—Every kind of letter press printing will be done to order on short notice at the office of the Mechanic, in the best manner and at reasonable prices. Business, visiting and wedding cards executed in a superior style on an hour's notice New and fashionable type for books and pamphlets; hand bills of every size and style; circulars, bill heads, &c. &c.

AGENTS WANTED.

Mechanics out of employment may find it a paying business to solicit subscribers for this paper in their vicinities and among their friends. Applications, post paid, directed to this office will meet with attention; they should be accompanied by certificates of character and responsibility.

The following local agents are authorized to receive subscriptions and money for this paper.

Messrs. Wells & Webb, 42 Ann street, New York.

James Hegeman, Troy	P. P Cleveland, Skeneateles
J. M. Edgerton, West Troy	Chas. White, Auburn
J. B. Gilson, Waterford	Chas. Coy, Canandaigua
Jacob J. Deforest, Schenectady	John Williams, Cazenovia
Andrew Hanna; Utica	Jas. Goddard, Truxton
N. G. Brown, Milltown	M. W. Hemiup, Geneva
J. M. Brown, Cohoes	Luther Moore, Rochester
S Lewis, Honeoye	T. S. Hawks, Buffalo
E. T. Hayden, Syracuse	Geo. Francis, Waterloo
D. B. Prince Rome	E. G. Chapin, Little Falls
R. Stone, Newark	C. A. Spencer, Canastota

W. H. Parker, Cortland Village.

Postmasters will forward subscriptions and money free of expense, as the law authorizes them to do.

NEW YORK STATE MECHANIC,
A weekly paper, devoted to the interests of Mechanics and Manufacturers,
IS PUBLISHED EVERY SATURDAY,
By JOEL MUNSELL,
No. 58 State Steet, Albany,
At $1.50 per annum in advance.